

LISTING OF CLAIMS

1(currently amended). A method for [producing] dispensing a foam comprising:

(a) combining at least one [liquid] epoxy component, [with] at least one acid source component, wherein said at least one acid source component comprises at least one hydrogen donating Lewis acid that is substantially water free, and at least one encapsulated blowing agent, under conditions sufficient to [provide] cause an exothermic reaction between said at least one liquid epoxy and at least one Lewis acid during said combining wherein an amount of heat is generated from said exothermic reaction that is sufficient to expand the combined components; [and]

(b) utilizing heat from the exothermic reaction [so as] to expand the combined components [to form a foam] , and;

(c) dispensing a foam into a cavity.

2(currently amended). The method of Claim 1 [further comprising (c) recovery of the foam] wherein the encapsulated blowing agent is combined with said at least Lewis acid prior to contact with said at least one epoxy component.

3(currently amended). The method according to Claim 1 wherein said at least one acid source comprises phosphoric acid that [is substantially water free] comprises less than about five weight percent water.

4(previously presented). The method according to Claim 1 wherein the epoxy component is present in a first precursor composition and the acid source is present in a second precursor composition wherein said second precursor composition has an acidic pH.

5(currently amended). The method according to Claim 1 wherein [the first precursor composition further comprises an] the at least one encapsulated blowing agent [comprising] comprises at least one member selected from the group consisting of butane, propane, isopentane and fluorocarbons.

6(previously presented). The method according to Claim 4 wherein the second precursor composition further comprises polyvinyl alcohol.

7(currently amended). The method according to Claim 1 [wherein the epoxy compound and the acid source are present in a single foam precursor composition] wherein the encapsulated blowing agent is combined with said at least one epoxy component prior to contact with said at least one Lewis acid.

8(previously presented). The method according to Claim 1 wherein said [components are dispensed into] cavity comprises a containment device.

9(currently amended). The method according to Claim [1] 4 wherein [step (a) comprises dispensing through a mixing device comprising a static mix head] the ratio of the first component to the second component ranges from about 1:1 to about 3:1.

10(previously presented). The method according to Claim 8 wherein the containment device comprises polyethylene, polyester, vinyl, ethylene vinyl acetate, nylon, ethylene vinyl acetate, styrene-isoprene-styrene, styrene-butadiene-styrene or other blocked copolymers, polybutadiene, polyamide, modified EVA's, modified polyethylene, modified polybutadiene, GMA, SBR or mixtures thereof.

11(previously presented). The method according to Claim 1 further comprising laminating at least a portion of the foam.

12(previously presented). A foam composite comprising a foam produced according to the method of Claim 1 which is at least partially laminated onto at least one member selected from the group consisting of polyethylene, polyester, vinyl, ethylene vinyl acetate, nylon, ethylene vinyl acetate, styrene-isoprene-styrene block copolymers, styrene-butadiene-styrene block copolymers, polybutadiene, polyamide, modified EVA's, modified polyethylene, modified polybutadiene, GMA, SBR or mixtures thereof.

13(previously presented). The foam composite of Claim 12 further comprising at least one of polyethylene or polystyrene powders.

14(currently amended). A foam precursor comprising:

- (a) an A-side foam precursor composition comprising at least one liquid epoxy compound, and at least one encapsulated blowing agent, and;
- (b) a B-side foam precursor composition comprising at least one carrier and at least one acid source comprising about 1 to about 30wt.% of [substantially water free] phosphoric acid having less than about 5 weight percent water and wherein said B-side foam precursor has an acidic pH and the ratio of said A-side to said B-side ranges from about 1:1 to about 3:1 .

15(currently amended). The foam precursor according to Claim 14 wherein (a) further comprises at least one phenoxy resin.

16(currently amended). The foam precursor according to Claim 14 wherein [(b) further comprises a] said at least one carrier material comprises polyvinyl alcohol.

17(currently amended). The foam precursor of Claim 16 wherein said [carrier comprises polyvinyl alcohol] encapsulated blowing agent comprises at least one hydrocarbon.

18(original). The foam precursor of Claim 14 wherein the encapsulated blowing agent comprises a thermoplastic shell that contains a butane blowing agent.

19(original). The foam precursor of Claim 14 wherein at least one of the A-side precursor and the B-side precursor further comprises castor oil, at least one benzyl phthalate and at least one member selected from the group consisting of Bis A epoxy and Bis F epoxy.

20(previously presented). The foam precursor of Claim 14 wherein said epoxy compound comprises a bis-A or bis-F epoxy compound; the blowing agent comprises a butane blowing agent and the A-side precursor further comprises at least one member selected from the group consisting of polypropylene, polyethylene and polyvinyl alcohol.

21 (currently amended). A foam precursor comprising:

- (a) a A-side foam precursor composition comprising at least one [liquid] epoxy compound,
- (b) a B-side foam precursor composition comprising a combination comprising at least one polyol[,] and at least one acid source

comprising substantially water free phosphoric acid and [having]  
wherein said B-side has an acidic pH [wherein said phosphoric acid  
comprises about 3 to about 15 wt.% of the B-side]; and

- (c) at least one encapsulated blowing agent combined with at least one  
of said A or B side precursor and wherein the ratio of A-side to B-  
side is about 1:1.

22(previously presented). The foam precursor of Claim 21 wherein said A  
side further comprises polyvinyl alcohol and at least one phenoxy resin.

23(previously presented). The method of Claim 9 wherein said static  
mixing head is affixed in a manner to seal a cavity into which the foam is  
dispensed.

24(currently amended). A method for producing a foam comprising:  
combining at least one [liquid] epoxy component, at least one acid source  
comprising phosphoric acid, and at least one encapsulated blowing agent under  
ambient conditions wherein during said combining an exothermic reaction occurs  
[when said at least one epoxy component and said at least one acid source are  
contacted that is sufficient to generate enough heat to expand the combined  
components] that is sufficient to expand the encapsulated blowing agent,  
[dispensing the combined components into a containment device]  
dispensing a foam.

25(currently amended). A method for producing a foam comprising:  
combining an A-side foam precursor composition comprising at least one  
[liquid] epoxy compound, a B-side foam precursor composition comprising at least  
one acid source comprising phosphoric acid and having an acidic pH, and at least

one encapsulated blowing agent present in at least one of said A-side and B-side wherein the ratio of A-side to B-side is about 1:1 and [,] wherein said combining is performed under ambient conditions [sufficient to cause] and results in an exothermic reaction between at least one epoxy compound and said phosphoric acid that generates enough heat to expand said blowing agent during said combining, and

[dispensing the combination into a containment device]

dispensing a foam.

26(currently amended). A method for producing a foam comprising:  
providing an A-side foam precursor composition comprising at least one epoxy compound,

providing a B-side foam precursor composition comprising at least one acid source comprising phosphoric acid and having an acidic pH, wherein at least one encapsulated blowing agent is present in at least one of said A and B side foam precursors,

mixing the A-side and B-side foam precursors together wherein during said mixing an exothermic reaction occurs between said at least one epoxy compound and said phosphoric acid source and wherein the exothermic reaction generates an amount of heat sufficient to expand said encapsulated blowing agent, [and;]

using the heat to [produce a foam] expand the blowing agent, and;

dispensing a foam.

27(new). The foam precursor of Claim 21 wherein said at least one encapsulated blowing agent is combined with said B-side.

28(new). A method for producing a foam comprising:

providing an A-side foam precursor composition comprising at least one epoxy compound,

providing a B-side foam precursor composition comprising phosphoric acid, at least one carrier and at least one encapsulated blowing agent,

mixing the A-side and B-side foam precursors together at a ratio of about 1:1 to about 3:1 wherein during said mixing an exothermic reaction occurs that generates an amount of heat sufficient to expand said encapsulated blowing agent,

using the heat to expand the blowing agent, and;

dispensing a foam.

29(new). The method of Claim 28 wherein the ratio of A-side to B-side is about 1:1.

30(new). The method of Claim 28 wherein the phosphoric acid contains less than about 5 percent water.

31(new). The method of Claim 28 wherein the carrier comprises at least one polyol.

32(new). The method of Claim 28 wherein said dispensing comprises dispensing the foam into an automotive cavity.

33(new). The method of Claim 33 wherein the method is conducted at ambient conditions.

34(new). The method of Claim 33 wherein said A-side further comprises at least one polyvinyl alcohol.